Solder Temp (°C)	Wetting Time (Sec)									
	63Sn37Pb	99.3Sn/0.7Cu	96.5Sn/3.5Ag	ALLOY 349	Viromet 217	Viromet 411	Viromet 513	96.5Sn/3.5Ag/3.0Bi	95.5Sn/4.0Ag/0.5Cu	96Sn/2.5Ag/1.0Bi/0.5Cu
235	0.767	1.411	2.189	1.156	0.949	1.036	1.758	3.173	3.368	1.86
245	0.606	1.034	1.352	0.716	0.791	0.869	1.072	1.669	1.946	1.235
255	0.546	0.682	1.05	0.544	0.569	0.587	0.822	0.814	1.284	0.824
265	0.46	0.165	0.74	0.244	0.476	0.496	0.597	0.653	1.048	0.668

FIGURE 1

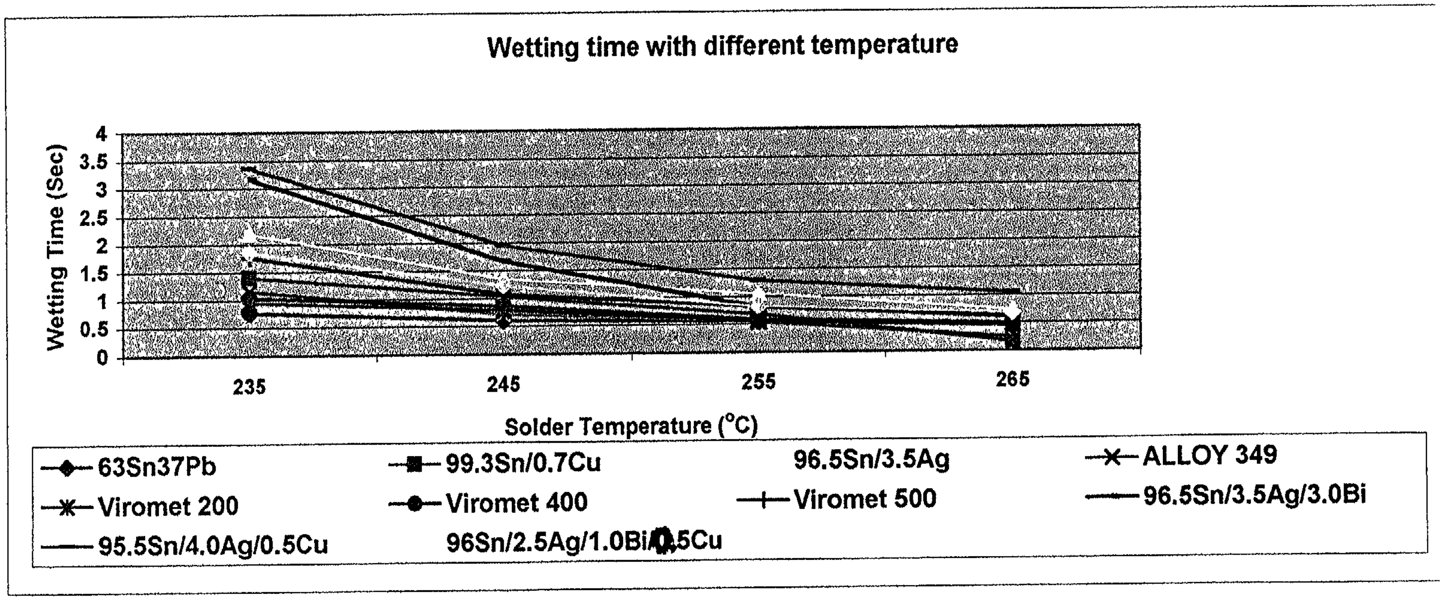

FIGURE 2

Solder Temp (°C)	Maximum wetting force at 2.0s (mN)									
	63Sn37Pb	99.3Sn/0.7Cu	96.5Sn/3.5Ag	ALLOY 349	Viromet 217	Viromet 411	Viromet 513	96.5Sn/3.5Ag/3.0Bi	95.5Sn/4.0Ag/0.5Cu	96Sn/2.5Ag/1.0Bi/0.5Cu
235	5.48	4.37	2.54	3.21	5.38	3.25	1.27	1.03	1.07	3.47
245	5.54	4.93	4.74	4.82	5.57	3.85	3.94	3.91	3.13	4.8
255	5.42	5.4	5.16	4.9	5.76	4.55	3.58	4.95	4.86	5.48
265	5.41	5.77	5.34	5.07	5.49	4.89	4.67	5.37	4.73	5.49

FIGURE 3

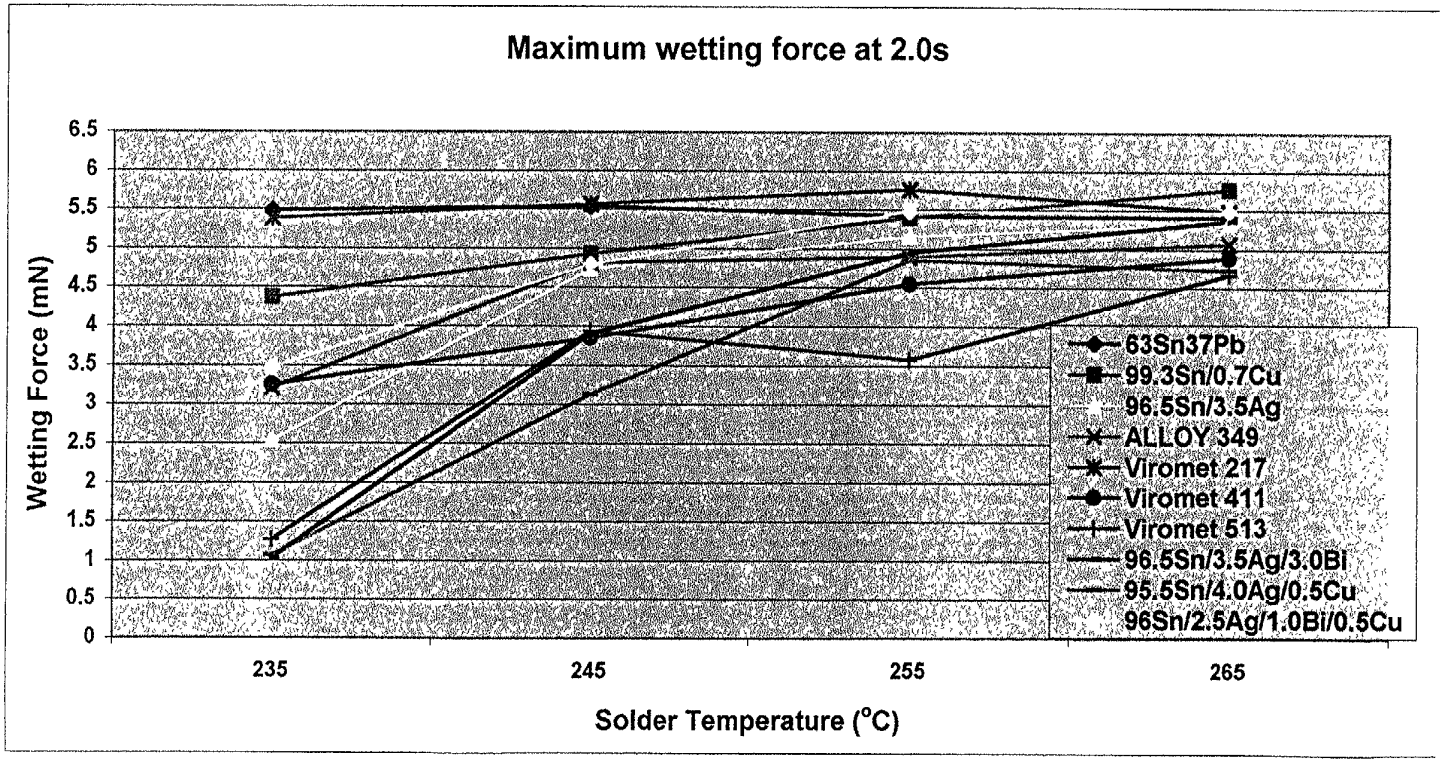

FIGURE 4

Properties	Type of alloys								
	63Sn/37Pb	99.3Sn/0.7Cu	96.5Sn/3.5Ag	Viromet 217	ALLOY 349	Viromet HF	96.5Sn/3.5Ag/3Bi	95.5Sn/4Ag/0.5Cu	96Sn/2.5Ag/0.5Cu/1Bi
Melting Temp.(°C)	183	227	221	199-209	205-210	203-215	195-215	194-218	196-218
CTE(um/m°C)	23.3	19.3	22.7	22.5	22.9	18.6	23.1	21.5	14.5
SG(g/ml)	8.4	7.31	7.38	7.34	7.4	7.3	7.22	7.4	7.38

FIGURE 5

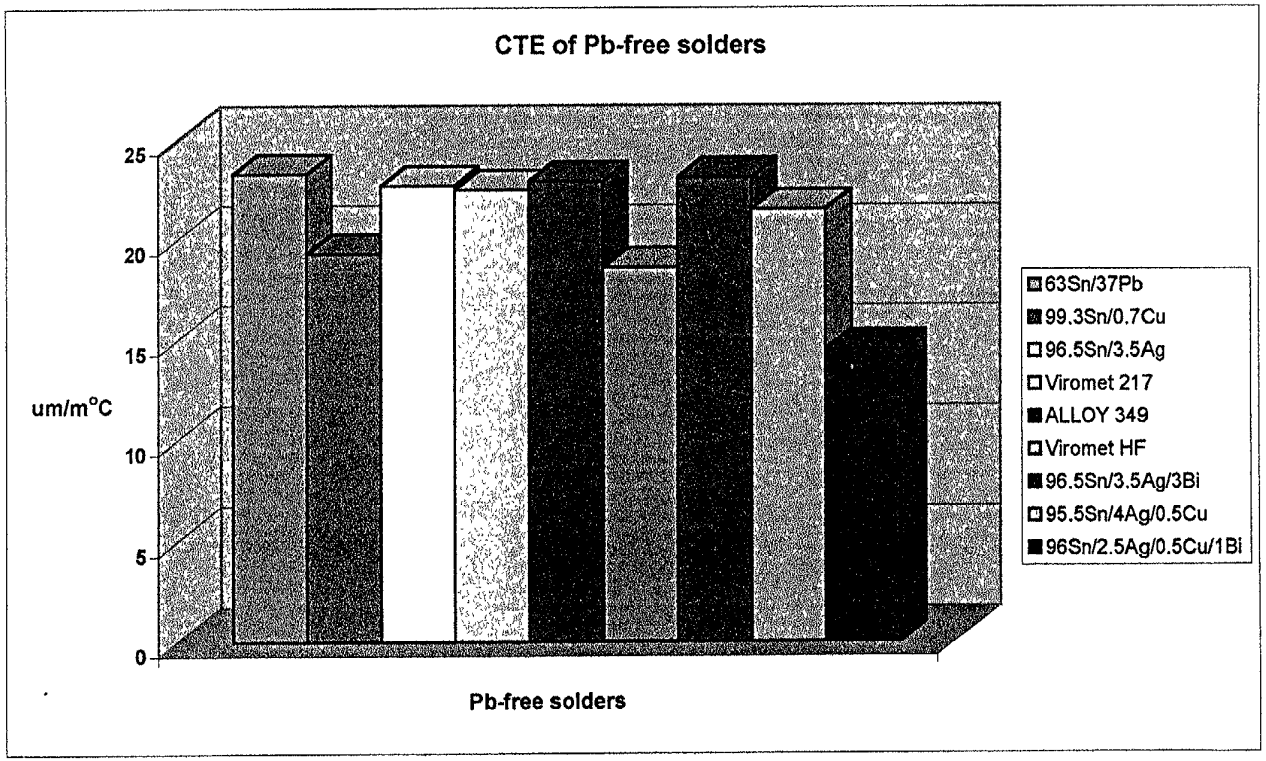

FIGURE 6

Properties	Type of alloys								
	63Sn/37Pb	99.3Sn/0.7Cu	96.5Sn/3.5Ag	Vitronet 217	ALLOY 349	Vitronet HF	96.5Sn/3.5Ag/3Bi	95.5Sn/4Ag/0.5Cu	96Sn/2.5Ag/0.5Cu/1Bi
Tensile Strength	48.37	39.76	55.15	96.18	68.23	68.06	84.79	49.55	63.11
Load at max load	1.37	1.12	1.56	2.71	1.93	1.92	2.4	1.4	1.78
Yield Strength	39.53	32.79	46.39	70.56	53.89	54.93	62.34	38.28	49.26
(at 2% offset)									
Young Modulus	4958.91	10111.55	11437.11	11396.76	9512.28	10692.66	9958.52	11396.93	11403.57

FIGURE 7

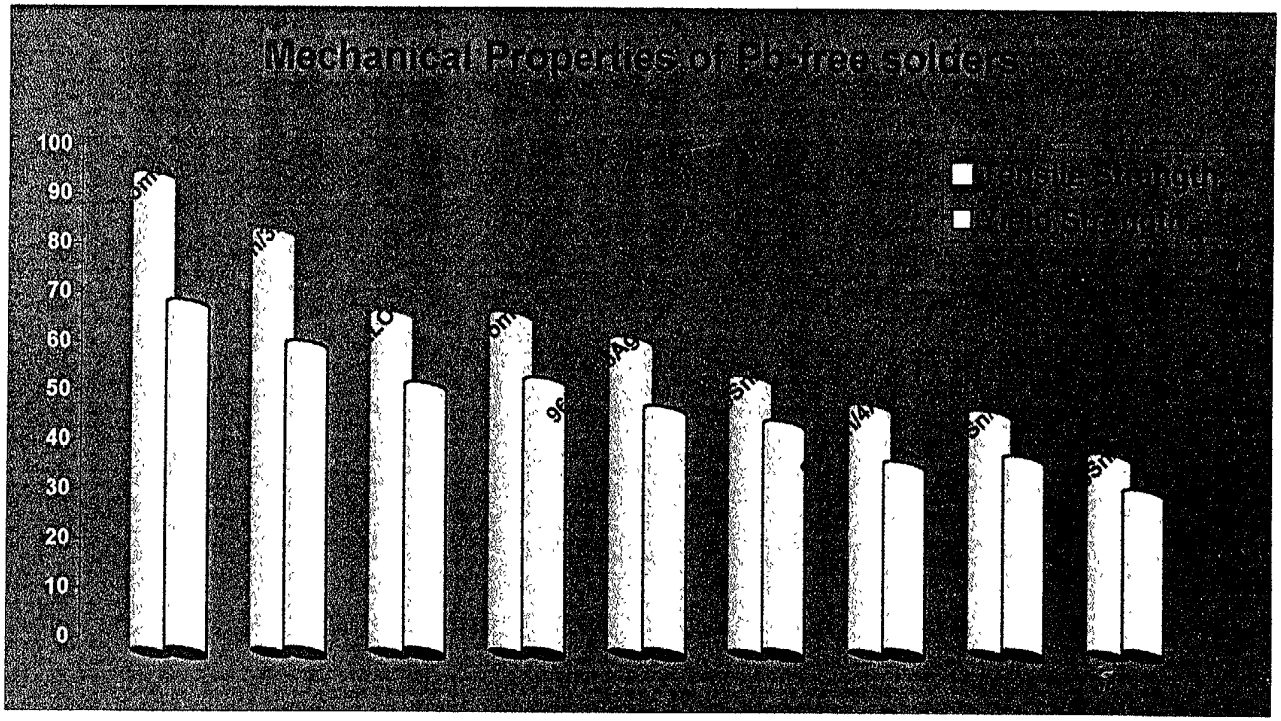

FIGURE 8

FIGURE 9

Type of Solder	Method of Soldering	Plating of Board	Type of Component	No. of lifted points	Total no of points	% of Occurrence
Viromet 217 3	Wave 245/1.0	Au	Diodes	24	24	100
			Resistors 1	29	32	91
			Resistors 2	27	36	75
	Wave 255/1.0	Au	Diodes	19	20	95
			Resistors 1	37	40	92.5
	Dip	Au	Connector	40	40	100
		HASL	Jumpers	22	32	69
Sn/3.2Ag/0.5Bi/4In	Dip	HASL	Jumpers	16	24	**66.7**
Sn/3.2Ag/1Bi/6In	Dip	HASL	Jumpers	18	24	**75**
Sn/3.2Ag/2Bi/6In	Dip	HASL	Jumpers	14	20	**70**
ALLOY 349	Dip	OSP	Connector 1	0	6	0
			Resistor	0	22	0
	Dip	Au	Resistor	0	20	0
			Diodes		16	0
Sn/4Ag/0.5Cu/1Bi	Dip	HASL	Jumpers	15	24	**62.5**
Sn/Ag	Dip	HASL	Jumpers	5	28	17.9

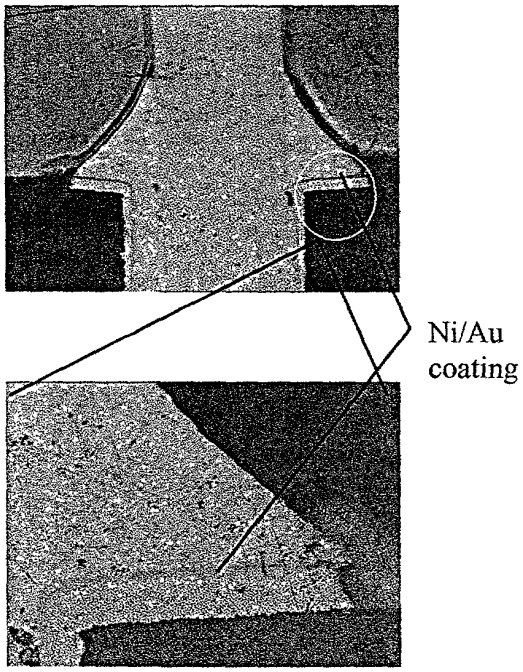

FIGURE 10A

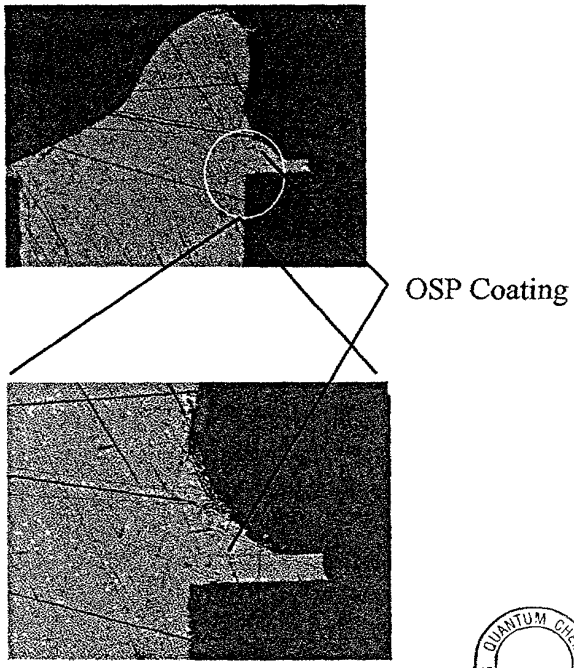

FIGURE 10B

QUANTUM CHEMICAL TECHNOLOGIES

Type of Solder	Conc of copper (% by weight)	Dissolution rate of copper
Viromet 349	0.06312	0.0118406
Viromet 217	0.05506	0.0112433
Sn/Cu0.7	0.16017	0.0320858
Sn/Ag/Cu	0.13221	0.0264772
Sn63/Pb37	0.02279	0.0045627

FIGURE 11

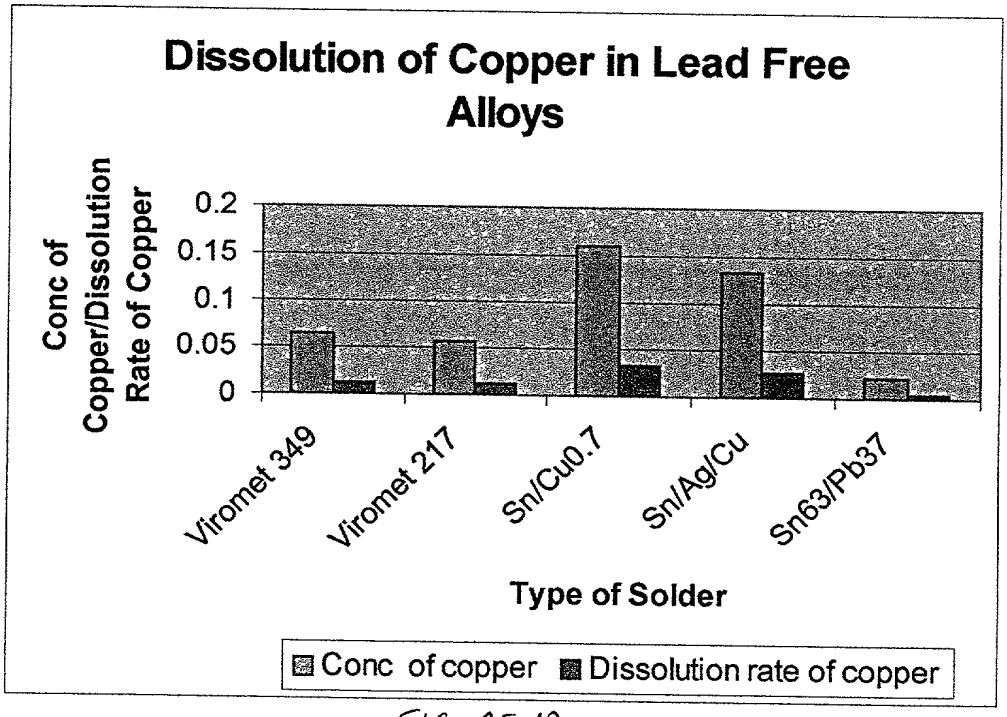

FIGURE 12

Solder Alloy	1	2	3	4	Total (g/h)
Sn63/37	6.55	6.80	7.05	6.80	27.2
Viromet 217	3.8	5.50	5.60	6.90	21.80
Viromet 349	7.20	6.41	5.45	5.88	24.94
Sn/Cu0.7	10.36	10.71	10.70	10.10	41.87
Sn/Ag/Cu	13.95	10.95	10.50	12.85	48.06

FIGURE 13